WHAT IS CLAIMED IS:

1. (Original) A method for transmitting data to multiple destinations comprising:

storing a data portion having a current destination in association with a next destination tag, the next destination tag indicative of a next destination for the data portion;

(a) transmitting a copy of the data portion to the current destination;

(b) updating the current destination to be the next destination and updating the next destination tag to have the value of a new next destination tag, the new destination tag indicative of a new next destination;

(c) after updating, storing the next destination tag in association with the stored data portion; and

repeating steps (a), (b), and (c) at least once.

2. (Original) The method of Claim 1, wherein updating the next destination tag comprises assessing a table associating the next destination tag with the new next destination tag.

3. (Original) The method of Claim 2, wherein the table is a multicast control table.

4. (Original) The method of Claim 1, wherein storing a data portion in association with a next destination tag comprises storing an ATM cell having a header and a flow control tag.

5. (Original) The method of Claim 4, wherein storing the updated next destination in association with the stored data portion comprises modifying the flow control tag.

6. (Original) The method of Claim 1, wherein the data portion is the data payload of an ATM cell.

7. (Original) The method of Claim 4, and further comprising storing a flag in the flow control tag, the flag indicative of whether additional destinations for the data portion exist.

8. (Currently Amended) A method for transmitting data to multiple destinations comprising:

receiving a data portion;

determining a first destination for the data portion;

assigning a first tag to the data portion, the first tag identifying a second destination for the data portion;

storing the data portion and the first tag in memory;

reading the data portion and tag from memory and transmitting the data portion to the first destination;

determining, based on the first tag, a second tag that identifies a third destination for the data portion; and

storing the second tag in association with the stored data portion~~.~~;

wherein assigning a first tag to the data portion comprises associating the first destination with the first tag; and

wherein the list comprises an entry having a multicast flag and the subsequent destination, the entry indexed by the current destination.

9. (Original) The method of Claim 8, wherein receiving a data portion comprises receiving an ATM cell at an ATM switch.

10. (Original) The method of Claim 9, wherein the ATM cell has a header, and wherein determining a first destination for the data portion comprises determining by a classifier in an ATM switch, a first destination for the data portion and wherein the first tag is assigned based on the header of the ATM cell.

11. (Canceled)

12. (Currently Amended) The method of Claim ~~11~~8, wherein associating the first destination with the first tag comprises accessing a list associating a current destination for the data portion with a subsequent destination for the data portion.

13. (Canceled)

14. (Original) The method of Claim 8, wherein the first destination is represented by a memory address.

15. (Original) The method of Claim 8, wherein storing the data portion and the first tag in memory comprises storing the first tag as part of a header of the data portion.

16. (Original) The method of Claim 8, wherein determining, based on the first tag, a second tag that identifies a third destination for the data portion comprises accessing a multicast link table.

17. (Original) The method of Claim 8, wherein the first destination is represented by a memory address.

18. (Original) The method of Claim 8, wherein storing the second tag in association with the stored data portion comprises writing the second tag over the stored first tag.

19. (Original) A system for transmitting data to multiple destinations comprising:

a data memory;

a multicast control table associating a current tag with a next tag, the current and next tags associated with destinations for a data portion received by the system;

an enqueuer and multicast controller operable to:

assign a first tag to the received data portion, the first tag indicative of a second destination for the data portion;

initiate storing of the data portion and the first tag in memory;

determine, based on the first tag and the multicast control table, a second tag that identifies a third destination for the data portion; and

initiate storage of the second tag in association with the stored data portion.

20. (Currently Amended) The system of Claim ~~12~~19, and further comprising a classifier operable to receive the data portion and determine a first destination for the data portion.

21. (Currently Amended) The system of Claim ~~13~~19, and further comprising a buffer system mediating communication between the enqueuer and multicast controller and data memory.

22. (Currently Amended) The system of Claim ~~14~~19, wherein the multicast control~~flow descripter~~ table is stored in SSRAM.

23. (Currently Amended) The system of Claim ~~12~~19, wherein the received data portion comprises an ATM cell.

24. (Currently Amended) The system of Claim ~~12~~19, wherein the multicast control table further comprises a multicast flag indicating subsequent destinations exist for the received data portion.

25. (Canceled)

26. (New) A method for transmitting data to multiple destinations comprising:

receiving a data portion;

determining a first destination for the data portion;

assigning a first tag to the data portion, the first tag identifying a second destination for the data portion;

storing the data portion and the first tag in memory;

reading the data portion and tag from memory and transmitting the data portion to the first destination;

determining, based on the first tag, a second tag that identifies a third destination for the data portion;

storing the second tag in association with the stored data portion;

wherein receiving a data portion comprises receiving an ATM cell at an ATM switch; and

wherein the ATM cell has a header, and wherein determining a first destination for the data portion comprises determining by a classifier in an ATM switch, a first destination for the data portion and wherein the first tag is assigned based on the header of the ATM cell.

27. (New) A method for transmitting data to multiple destinations comprising:

receiving a data portion;

determining a first destination for the data portion;

assigning a first tag to the data portion, the first tag identifying a second destination for the data portion;

storing the data portion and the first tag in memory;

reading the data portion and tag from memory and transmitting the data portion to the first destination;

determining, based on the first tag, a second tag that identifies a third destination for the data portion;

storing the second tag in association with the stored data portion; and

wherein storing the second tag in association with the stored data portion comprises writing the second tag over the stored first tag.